

# STAT605 Economics BingXu

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## Analyzing Diversity Effects on Economic Outcomes

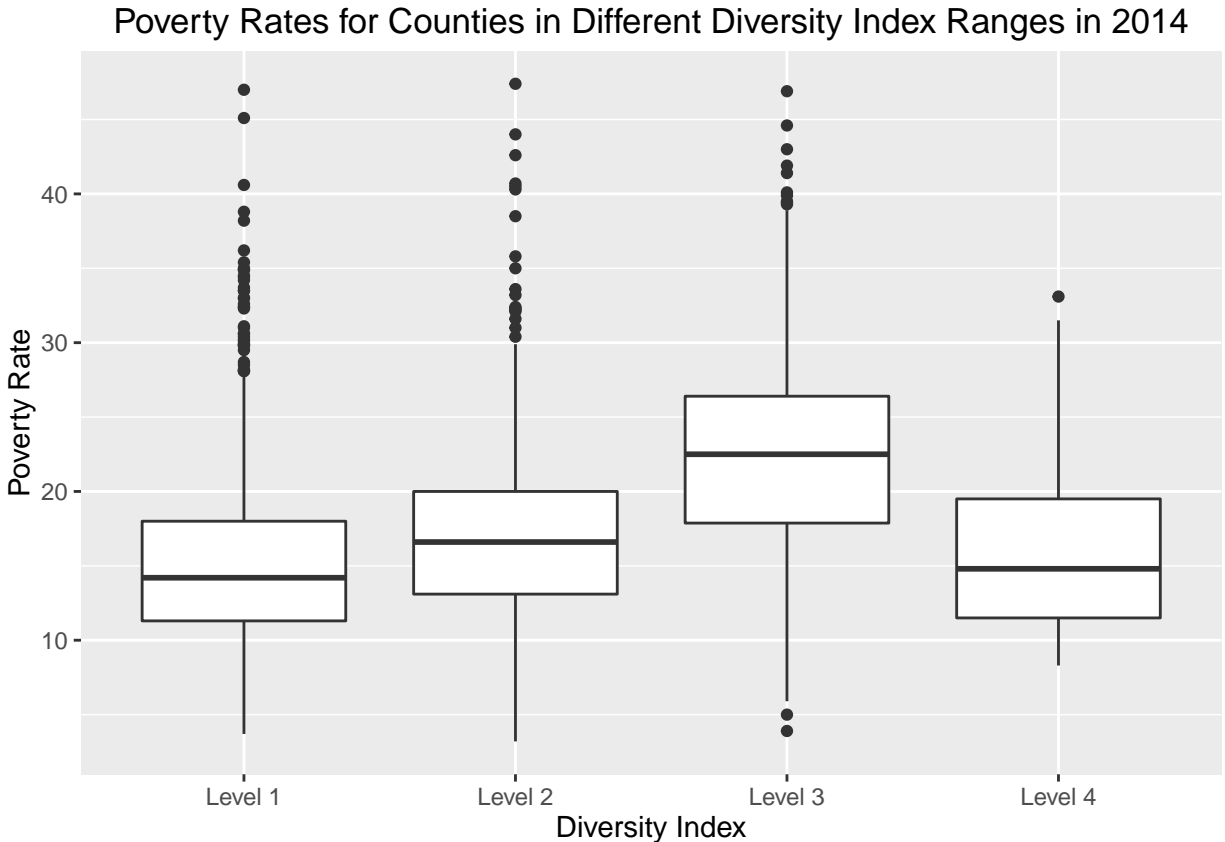
In this section, we are going to look at whether there is a relationship between the diversity and economic outcomes within counties. We are using variables like poverty rate, unemployment rate, median income and the income gap as indicators of counties' economic outcomes.

### 1. US Census Bureau Poverty Estimates

US Census Bureau Model-based Small Area Income & Poverty Estimates provides the estimates of the total population and the population of falling below the poverty line in each county in 2014 and we get the poverty rate estimates from this dataset. And we categorize counties into four types by the diversity index. The four types are:

- \*Level 1: The diversity index is from 0 to 0.2.
- \*Level 2: The diversity index is from 0.2 to 0.4.
- \*Level 3: The diversity index is from 0.4 to 0.6.
- \*Level 4: The diversity index is from 0.6 to 0.8.

Then we draw the following graph and try to find whether there are differences of poverty rates in different diversity index ranges.



### *Commentary and Interpretation:*

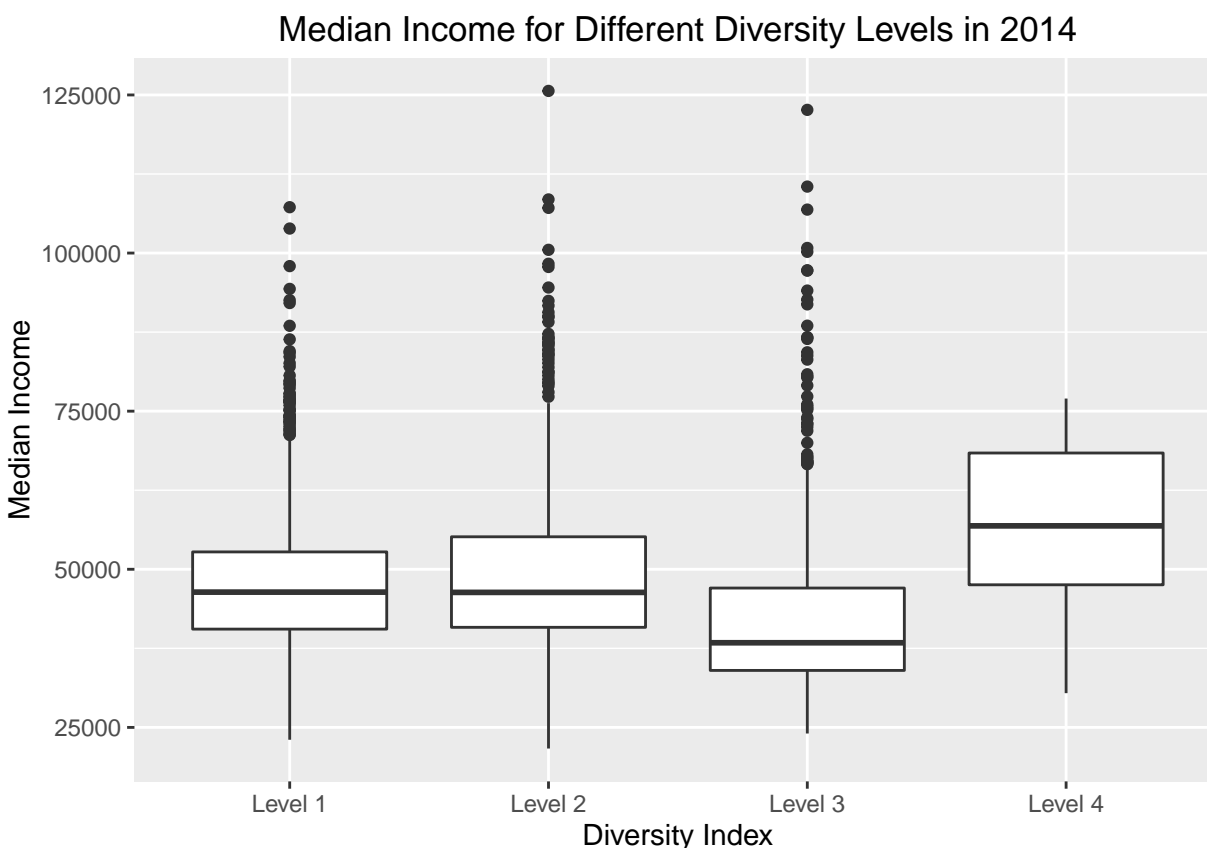
We can observe that when a county's diversity index is extremely low or high, its poverty rate tends to be relatively low. For counties that have an intermediate diversity index, the poverty rates are increasing. The poverty rates of Level 3 are significantly higher than other groups'.

One possible explanation is that in counties with intermediate diversity levels, some minority groups are possibly marginalized and these groups are more easily to be in poverty status which raise the poverty rate. While in slightly or highly diversified counties, this situation will be unlikely to occur.

## **2. US Census Bureau Median Household Income**

From US Census Bureau Model-based Small Area Income & Poverty Estimates, we can also get the annual median household income data for each county in 2014.

We create the similar boxplot using the median household income and the diversity index level.



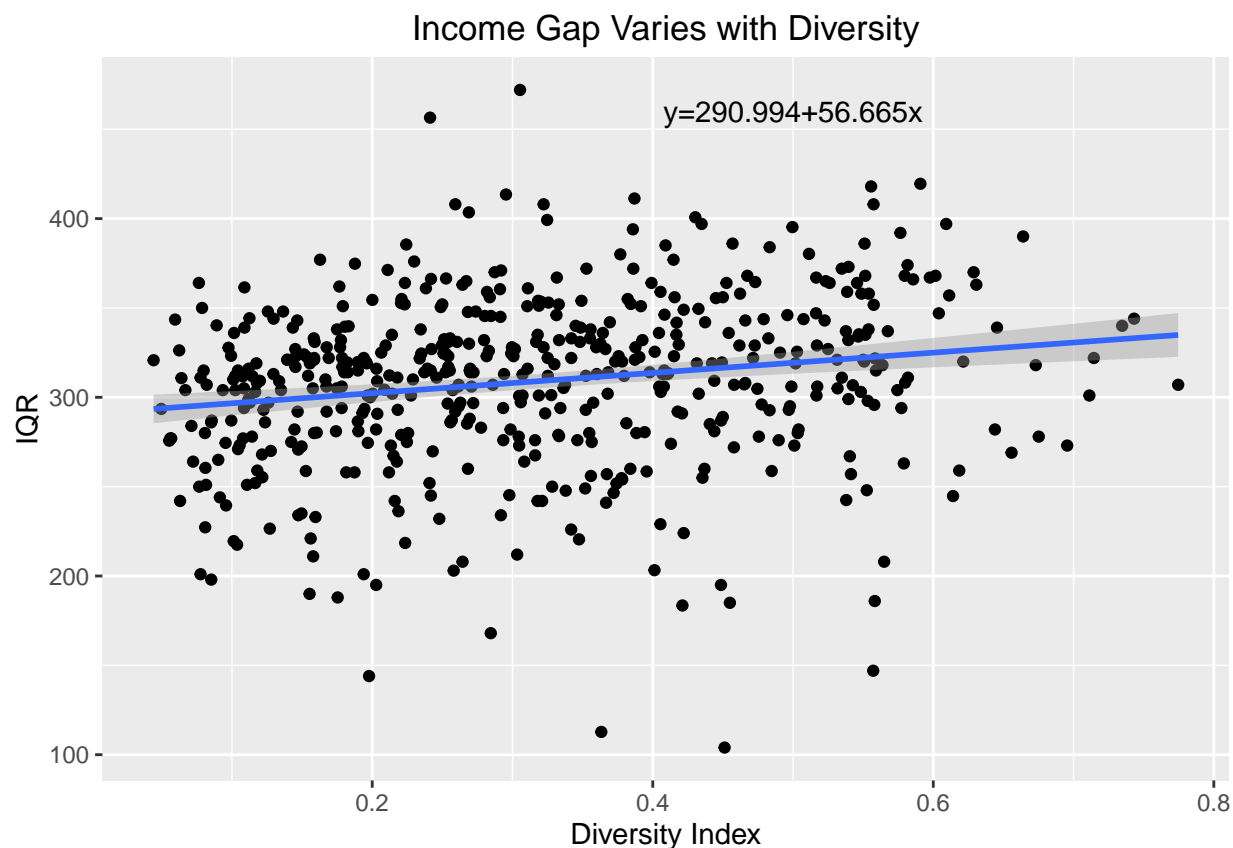
### *Commentary and Interpretation:*

We can see that the median household income for Level 3 is lower than other groups', which is consistent with results in the poverty rate part. So the low median household income for Level 3 may be due to the marginalization of some minority groups.

We can also notice that Level 4's median household income is the higher than other three groups'. One possible reason is that highly diversified counties are more international and more international regions are more likely to have higher income levels.

### 3. IPUMS Educational Attainment

We also use the IPUMS dataset to observe the relationship between the income gap and the diversity index. We use the interquartile range of household incomes for a given county as the income gap.



We can observe a positive relationship between the income gap and the diversity index from the scatterplot. The correlation is not very strong as the income gap could be affected by many factors. A county with a higher diversity index tends to have a more obvious income gap. This trend may be explained by the racial divide between highest and lowest-paying jobs, which increase the income gap. While for less diverse counties, this phenomenon is not that severe.